

GCB-200

Datasheet



GCB-200 is a small, light weight ground penetrating antenna for geological and environmental applications. GCB-200 is a fully shielded antenna with a very high front-to-back ratio, making it an ideal choice for noisy environments.

Because of the scalability of Geoscanners products, antennas can be combined with different systems to ensure that the customer has the best conditions for the planned survey. GCB-200 is no exception and can be used with different accessories, carts, control units etc. Furthermore, GCB-200 is also compatible with GSSI control units. This gives endless possibilities and let's the user change antennas without having to purchase complete new systems.

GCB-200 is the perfect antenna for relatively deep utility detection and geological surveys. Its penetration depth is up to 10 meters, depending on the relative dielectric permittivity (RDP) of the area under survey and its electrical conductivity properties.

The high efficiency of GCB-200 together with the excellent sensitivity of the antenna's receiver allows the user to perform deep surveys with outstanding resolution and data.

Note: The information in this datasheet is based on the latest information at the time of publication. Geoscanners AB® reserves the right to make changes at any time, without notice to color, specifications, accessories, materials and models. For more information contact the Geoscanners AB Sales Department +46(0)92153020. ©2015 Geoscanners AB, Sweden.



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Area of Application

- Geotechnical and environmental
- Utility detection, UST and void detection
- Archeological investigations
- Forensics

Mechanical and Environmental Specifications

Dimensions LxWxD	360x330x157 mm/ 14.2x13.0x6.2 inches
Weight	3.5 kg/ 7.71 pounds
Fastening points LxW	210x160 mm/ 8.26x6.30 inches
Ingress Protection	IP65
Operating Temperature	-25°C up to +40°C / 14°F up to 104°F
Relative Humidity	99% (NC)

Electrical Specifications

Antenna Type	Quarter Wavelength Bowtie
Shield Type	Top and Side Shield
Distance between the TX and RX	140 mm/ 5.51 inches
Feed point impedance	347 Ohms
Transmitted Pulse Amplitude	100 Volts
Receiver Sensitivity	14 μ Volts
Dynamic Range	137 dB
Antenna Bandwidth	98% at 10dB
Antenna Center frequency	210 MHz at 10dB
Survey Wheel Output Voltage	5.01 Volts

Recommended Specifications

Pulse repetition Frequency, PRF	≥ 50 kHz
Scan Rate	≥ 50 Traces/Second
Range (depends on soil penetration)	30-200 ns
Low Pass Filter Cut-Off Frequency	400 MHz
High Pass Filter Cut-Off Frequency	100 MHz
Gain	Adjust to 75% Swing

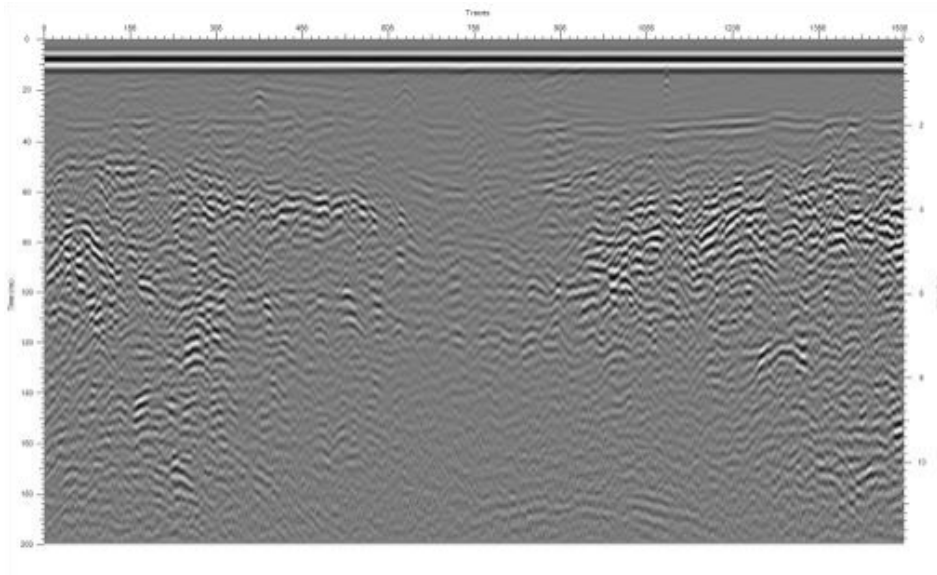
Accessories*

- Tray S2 antenna tray with belts
- SVC-820 4-wheel survey cart
- GSH-490 rough terrain survey trailer

*Accessories are not included

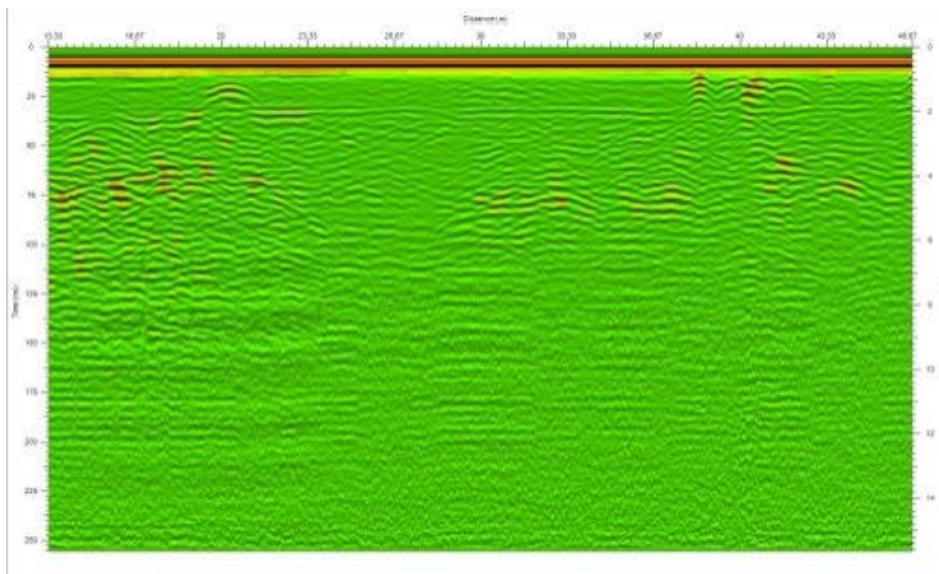
The data shown in image 1 depicts the results obtained from surveying a sandy road between high buildings and in a very noisy environment. It shows good penetration way beyond the 10 meters depth and excellent resolution of the different layers. The bottom of the road, the frost layer and several pipes are easily detected.

It is important to keep in mind that in areas with high conductivity, values of the order of 5 mS and more, the penetration can be heavily affected. Setting very long ranges and high gains in these conditions is not going to improve the situation in any favourable way.



1. GCB-200 surveying sandy road with buildings around

As shown in image 2, the penetration of the antenna in this area with a soil conductivity value of 6 mS is limited to 90 ns or approximately 5 meters. In these conditions it is of no use at all to set a range of 250 ns. In general it is much better to have 100 ns of uncompressed good quality data rather than 250ns of compressed data with more than half of it being useless.



2. GCB-200 operated in a heavily conducting soil, penetration is limited.

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